

[POLYSILICON THIN FILM TRANSISTOR AND METHOD OF FORMING THE SAME]

Abstract

A polysilicon thin film transistor and a method of forming the same is provided. A poly-island layer is formed over a substrate. A gate insulation layer is formed over the poly-island layer. A gate is formed over the gate insulation layer. Using the gate as a mask, an ion implantation of the poly-island layer is carried out to form a source/drain region in the poly-island layer outside the channel region. An oxide layer and a silicon nitride layer, together serving as an inter-layer dielectric layer, are sequentially formed over the substrate. Thickness of the oxide layer is thicker than or the same as $(\text{thickness of the nitride layer multiplied by } 9000\text{\AA})^{1/2}$ and maximum thickness of the nitride layer is smaller than 1000\AA .